



## Gigabit Web Managed Switch Empower “DoS Attack Preventive” and “VoIP Friendly” Networks

- 48/96 Gbps Non-blocking Switching Fabric
- Auto DoS Attack Prevention
- Auto VoIP
- Flexible 4 GbE Uplink Interfaces
- IEEE 802.3ad Static Port Aggregation
- Streamlined Web-based Interface
- IEEE 802.1Q VLAN
- Port security
- IEEE 802.1p with 4 Priority Queues
- WRR and SPQ Queuing Algorithms



24-port/48-port  
Web Managed Switch

**GS-1524**  
**GS-1548**

### Benefits

#### Robust System Design

ZyXEL GS-1524/GS-1548 are 24/48-port L2 Gigabit switch with advanced Web-based management support, and it's specially designed for SB/Enterprise networks where extra bandwidth and advanced QoS or security features are required. To cope with the diverse requirements of SB/Enterprise businesses, the ZyXEL GS-1524/GS-1548 Web-managed switch comes with 20/40 Gigabit copper ports plus 4 dual-personality (RJ-45/SFP) Gigabit ports to provide 48/96 Gbps of non-blocking connectivity for SB/SMB networks. With the flexible multi-function design, GS-1524/GS-1548 fits any network with very little effort.

#### Evolution New Managed Power

While many legacy Web-based Smart switches improve manageability, configuration complexity is still an issue; for most SB/Enterprise, inadequate IT expertise and complicated configuration are the major concerns to overcome. Powered by the next-generation hardware platform with a content-aware engine, ZyXEL GS-1524/GS-1548 delivers stress-free networking. In addition, the streamlined and intuitive Web-GUI makes GS-1524/GS-1548 even easier to configure to slash the efforts needed.

#### Auto DoS Attack Prevention

Security is becoming increasingly important in SB/Enterprise networks. Equipped with Auto DoS Attack Prevention, the GS-1524/GS-1548 is capable of protection against ubiquitous DoS attacks. A few mouse clicks are all it takes to initiate the protection, complete the once-complicated ACL setting and reduce operating efforts dramatically. The GS-1524/GS-1548 supports 802.1Q VLAN for traffic isolation, as well as Static MAC forwarding and dynamic ARP to establish a strictly protected network.

#### Auto VoIP Optimization

Migration to VoIP is the key to differentiate business competitiveness. It usually requires IT expertise to optimize a network for VoIP applications. With emergence of the “Auto VoIP” feature, however, the GS-1524/GS-1548 can identify VoIP packet patterns and grant the highest priority to establish a VoIP-friendly communication automatically. “Auto VoIP” offers IP telephony without configuration headaches; features such as four priority queues and the WRR (Weighted Round Robin) scheduling algorithm are usually deployed on enterprise networks, allowing users to optimize network bandwidth usage and implement QoS (quality of service). In terms of bandwidth management and switch interconnections, users can choose from several options and pick the most appropriate with just a mouse click.

## Specifications

### System Compliance

- IEEE 802.3 10Base-T Ethernet
- IEEE 802.3u 100Base-Tx Ethernet
- IEEE 802.3ab 1000Base-T Ethernet
- IEEE 802.3z
- IEEE 802.3x Flow control
- IEEE 802.1p Class of service, priority protocols
- IEEE 802.1Q VLAN tagging
- IEEE 802.3ad static port aggregation

### Performance

- 48 Gbps/96 Gbps non-blocking switching fabric
- Switching Forwarding Rate 35.7 Mpps/71.4 Mpps
- Wire-speed performance

### MAC and Packet Buffer

- 8 K MAC entries
- 512 KB Packet Buffer

### Traffic Management and QoS

- Rate Limiting: Port-based bandwidth control (64 kbps, 256 kbps, 1 Mbps, 10 Mbps, 64 Mbps, 100 Mbps, 1 Gbps)
- Port-based egress traffic shaping
- Broadcast Storm Control
- Congestion control on all ports
- IEEE 802.1p with 4 priority queues per port for different types of traffic
- WRR (Weighted Round Robin)/SPQ scheduling algorithm
- Jumbo frame support (up to 9 KB)

### Auto VoIP

Auto VoIP module explicitly matches VoIP streams in switches and assign the highest priority for the following VoIP packets

- SIP—Session Initiation Protocol
- MGCP—Media Gateway Control Protocol
- SCCP—Skinny Client Control Protocol

### Link Aggregation

- IEEE 802.3ad static port aggregation
- Up to 6 aggregation groups, per group supports up to 8 ports

### User Security and Authentication

- Specific MAC forwarding per port: only specified MAC addresses can access the network (Port Security)
- IEEE 802.1Q tag-based and port-based VLAN
- 256 static VLAN, up to 4 K dynamic VLAN
- Dynamic ARP

### Auto DoS attack prevention

Auto DoS module explicitly matches attack patterns in switches and prevent network outage

#### Types of DoS Attacks can be prevented

- Land Attacks—These attacks result from sending a specially crafted packet to a machine where the source host IP address is the same as the destination host IP address. The system attempts to reply to itself, resulting in system lockup.
- Blat Attack—These switch result from sending a specially crafted packet to a machine where the source host port is the same as the destination host port. The system attempts to reply to itself, resulting in system lockup.
- SYNFIN Scans—SYNchronization (SYN, ACKnowledgement (ACK) and FINish (FIN) packets are used to initiate, acknowledge and conclude TCP/IP communication sessions. The following scans exploit weakness in the TCP/IP specification and try to illicit a response from a host to identify ports for an attack:
  - Scan SYNFIN—SYN and FIN bits are set in the packet
  - Xmascan—TCP sequence number is zero and the FIN, URG and PSH bits are set
  - NULL scan—TCP sequence number is zero and all control bits are zeros
  - SYN with port <1024—SYN packets with source port less than 1024
- Smurf Attacks—This attack uses Internet Control Message Protocol (ICMP) echo requests packets (pings) to cause network congestion or outages
- Ping Flooding—This attack floods the target network with ICMP packets
- SYN/SYN-ACK Flooding—This attack floods the target network with SYN or SYN/ACK packets

### Network Administration Security

- Password required for administrators

### Network Management

- Web-based management
- Telnet
- SNMP v1, v2, v3
- IP management: static IP or DHCP client
- RMON-Lite
- Port mirroring: supports Source/Destination/Both port mirroring
- Cable Diagnostic

### MIB Information

- RFC1213 MIB II
- RFC1398 (Ether-like)

### Hardware Specifications

- Support of auto-negotiation
- Support of auto MDI/MDI-X
- Ports: 20/44 1000Base-T, RJ-45 ports, 4 dual-personality (RJ-45/ SFP slot) GbE ports

### Physical Specifications

#### GS-1524

- 20 100/1000Base-T copper ports + 4 dual-personality (RJ-45/SFP) Gigabit ports
- Dimensions: 438 (W) x 215 (D) x 44.45 (H) mm
- Weight: 3 Kg



#### GS-1548

- 44 100/1000Base-T copper ports + 4 dual-personality (RJ-45/SFP) Gigabit ports
- Dimensions: 438 (W) x 240 (D) x 44.45 (H) mm
- Weight: 3.7 Kg



### Power Requirements

- Input voltage of AC: 100 ~ 240 VAC, 50/60 Hz
- Max power rating of AC:
  - GS-1524: 43 Watt
  - GS-1548: 82 Watt

### Environmental Specifications

- Operating temperature: 0°C ~ 45°C
- Storage temperature: -25°C ~ 70°C
- Operating humidity: 10% ~ 90%, (non-condensing)

### Certification

- UL 60950-1
- CSA 60950-1
- EN 60950-1
- IEC 60950-1

For more product information, visit us on the web [www.ZyXEL.com](http://www.ZyXEL.com)



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